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Mollie H. Beattie,

Director, U.S. Fish and Wildlife Service.

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84-94

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Three Insects From the Santa Cruz Mountains of California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes endangered status pursuant to the Endangered Species Act of 1973, as amended (Act), for the Mount Hermon June beetle (*Polyphylla barbata*) Zayante band-winged grasshopper (*Trimerotropis infantilis*), and Santa Cruz rain beetle (*Pleocoma conjugens conjugens*). These three insects are located in Santa Cruz County, California, and are threatened by urban development, recreational use, sand mining, agricultural activities, and alteration of natural fire frequency. This proposal, if made final, would implement the Federal protection and recovery provisions of the Act for these three species.

DATES: Comments from all interested parties must be received by July 11, 1994. Public hearing requests must be received by June 24, 1994.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Ventura Field Office, 2140 Eastman Avenue, suite 100, Ventura, California 93003. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ms. Judy Hohman at the above address (telephone 805/644–1766).

SUPPLEMENTARY INFORMATION:

Background

The Mount Hermon June beetle (*Polyphylla barbata*), Zayante band-winged grasshopper (*Trimerotropis infantilis*), and Santa Cruz rain beetle (*Pleocoma conjugens conjugens*) are endemic to restricted sandstone deposits in the Santa Cruz Mountains, Santa Cruz County, California. The Santa Cruz Mountains are a relatively young range composed of igneous and metamorphic rocks overlain by thick layers of sedimentary material uplifted from the ocean floor and ancient shoreline zone (Caughman and Ginsberg 1987). These Miocene marine terraces, referred to as the Santa Margarita formation (Marangio and Morgan 1986), persist as pockets of sandstones and limestones that are geologically distinct from the volcanic origins of the mountain range. Soils that formed from these sandstone deposits occur in scattered pockets covering about 3,240 hectares (ha) (8,000 acres (ac)) (Marangio and Morgan 1986), and are referred to as the Zayante series (USDA Soil Conservation Service 1980). Pockets of Zayante soils are deep, coarse-textured and poorly developed, and occur in three clusters in the Santa Cruz Mountains. The largest cluster is in the vicinity of the communities of Ben Lomond, Felton, Mount Hermon, and Olympia, and the city of Scotts Valley. A second cluster is in the Bonnie Doon area, and the third, which is the smallest, is in the vicinity of the community of Corralitos (Marangio 1985).

Predominant vegetation of the Santa Cruz Mountains consists of redwood forest (Zinke 1988) and mixed evergreen forest (Sawyer *et al.* 1988). Within the Santa Cruz Mountains, however, two unique communities are restricted to the Zayante soil series: maritime coast range ponderosa pine forest and northern maritime chaparral (Griffin 1964, Holland 1986). Maritime coast ponderosa pine forests are open park-like areas that usually contain ponderosa pine (*Pinus ponderosa*), knobcone pine (*P. attenuata*), coast live oak (*Quercus agrifolia*), and, at a few sites, the federally endangered Santa Cruz cypress (*Cupressus abramsiana*) (Griffin 1964, Holland 1986, Morgan 1983). Northern maritime chaparral, locally referred to as "silver-leaf manzanita mixed chaparral" (Marangio 1985, Marangio and Morgan 1986), is dominated by the endemic silver-leaved manzanita (*Arctostaphylos silvicola*), a candidate for Federal listing.

Both the knobcone pine and Santa Cruz cypress are dependent on naturally occurring fires at appropriate frequencies for regeneration. The association of these fire dependent species with maritime coast ponderosa pine forests indicates that fire frequency plays a role in the survival of this vegetation community. The ponderosa pines and associated trees occur in scattered to dense stands with an understory of small herbaceous plants and grasses and frequently little shrub understory. Maritime coast ponderosa pine forest may include areas lacking ponderosa pine. Local botanists refer to maritime coast ponderosa pine forest in this area as "ponderosa pine sand parkland" (Marangio 1985, Morgan 1983) or "ponderosa pine sandhill" (California Native Plant Society 1986). Because of their disjunct distribution, ponderosa pine sand parklands have been called "biological islands" (Marangio 1985).

The Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle have very restricted ranges within the Santa Cruz Mountains. With the exception of two sightings, all known localities for the three taxa are within a 52 square kilometer (20 square mile) range on ponderosa pine sand parklands.

The Mount Hermon June beetle was first described by Cazier (1938) from Mount Hermon, Santa Cruz County, California. It is 1 of 28 species of *Polyphylla* in America north of Mexico and 1 of 15 species of the *diffracta* complex within the genus *Polyphylla* (Young 1988). Young (1988) recently made several nomenclatural adjustments of the genus *Polyphylla* but retained *P. barbata*. Two other species of *Polyphylla* occur in the Ben Lomond-Mt. Hermon area, *P. crinita* and *P. nigra*. *P. crinita* occurs from British Columbia, Idaho, and Montana south to California and Nevada. *P. nigra* occurs from British Columbia south to Baja California, Mexico. The Mount Hermon June beetle is distinguished from other species of *Polyphylla* by the presence of relatively dense, long, erect hairs scattered randomly over the elytra (thick leathery front wings) and short erect hairs on the pygidium (abdominal segment) (Young 1988).

The adult male Mount Hermon June beetle is a cryptic small scarab beetle with a black head, dark blackish-brown elytra clothed with scattered long brown hair, and a striped body (Borror *et al.* 1976, Young 1988). Elytral vittae are broken, often reduced to discontinuous clumps of scales but still form identifiable lines (Young 1988). Females are larger, with a black head, chestnut color clypeus (plate on lower part of face) and elytra, and golden hairs on head, thorax, and legs (Young 1988). The one adult female described was 22 × 11 millimeters (mm) (0.87 × 0.43 inches (in)) while the holotype male was 20 × 9.7 mm (0.79 × 0.38 in) (Young 1988).

The Mount Hermon June beetle requires about 2 to 3 years to mature from hatching through the adult form. Most of the life cycle is spent in the larval form. The larvae are subterranean and feed on the roots of certain grasses (Dr. Art Evans, Los Angeles County Museum of Natural History, pers.

comm., 1993). Adults may feed on leaves (Dr. Fred Andrews, California Department of Food and Agriculture, pers. comm., 1993). Adult males are strong fliers and females are fossorial; they may be reluctant to fly because of their large body size (A. Evans, pers. comm., 1993; Dr. Alan Hardy, California Department of Food and Agriculture, pers. comm., 1993). For 1 to 2 months in spring and early summer, the adults emerge at dusk for mating and the males fly in search of females. This limited time period for mating suggests that a specific mechanism to ensure reproductive success is employed such as emission of pheromones by females to attract males (Lilly and Shorthouse 1971 *in* Young 1988). Within a short time after mating and egg-laying, the adults die.

The Mount Hermon June beetle is found on ponderosa pine sand parklands in the immediate vicinity of the communities of Mount Hermon, Glen Arbor, Olympia, and Ben Lomond in Santa Cruz County, California (Young 1988). A lone beetle specimen collected in 1968 is labeled as occurring in Santa Cruz. This specimen may have been a waif, since these beetles are strong fliers, or the location on the label was inaccurate (Stephen McCabe, California Native Plant Society, *in litt.*, 1991). Recent collections of Mount Hermon June beetles (1990) are from ponderosa pine sand parklands between the communities of Ben Lomond and Mount Hermon (S. McCabe, *in litt.*, 1991).

The limited range of the Mount Hermon June beetle is probably due to various factors including substrate preferences, food sources, and the apparent restricted home range of the females. Beetles of this genus prefer sand/grass or sand/grass and coniferous forest (substrate/plant) associations such as those found in ponderosa pine sand parkland (Borror *et al.* 1976; Young 1988; A. Hardy, pers. comm., 1993). The Mount Hermon June beetle seems to prefer grasses and conifers (A. Evans, pers. comm., 1993) associated with ponderosa pine sand parkland (Marangio and Morgan 1986).

The Zayante band-winged grasshopper (*Trimerotropis infantilis*) was first described from a ponderosa pine sand parkland area of the Santa Cruz Mountains, Santa Cruz County, California (Rentz and Weissman 1984). It is 1 of 54 species in the genus *Trimerotropis* (Rentz and Weissman 1984). This species is similar in appearance to *T. occulans*, which is restricted to San Luis Obispo and Santa Barbara Counties (Otte 1984), and *T. koebelei*, which is larger in size and has a wider frontal costa (wing vein), lower pronotal crest (dorsal body wall plate of the prothorax), and more distinct pronotal carinae (keel).

The Zayante band-winged grasshopper is one of the smallest species in the genus. The body and forewings are pale gray to light-brown with dark crossbands on the forewings. The basal area of the hindwings is pale yellow with a faint thin band (Otte 1984, Rentz and Weissman 1984). The hind tibiae are blue-gray and the eye is banded. The pronotum possesses lateral carinae represented as tubercles. Individual flights are between 1 to 2 meters (m) (3 to 7 feet (ft)), and the grasshoppers stridulate while flying, producing a buzzing sound (Rentz and Weissman 1984). Band-winged grasshoppers often alight on bare ground and are conspicuous in flight because of the color of the hind wings and the crackling sound made by the wings (Borror *et al.* 1976).

Locality records and recent collections indicate the distribution of the Zayante band-winged grasshopper is restricted to ponderosa pine sand parklands in the Santa Cruz Mountains, specifically in the vicinity of the community of Felton (Rentz and Weissman 1988; R. Morgan, private consultant, Soquel, California, *in litt.*, 1992). Efforts to collect Zayante band-winged grasshoppers from numerous localities in central Santa Cruz County and various habitats including grassland and chaparral have been unsuccessful except at ponderosa pine sand parklands (R. Morgan, *in litt.*, 1992). The Zayante band-winged grasshopper often occurs in association with the Ben Lomond wallflower (*Erysimum teretifolium*) (R. Morgan, *in litt.*, 1992), a federally endangered species that is also restricted to ponderosa pine sand parklands.

Horn (1888a, 1888b *in* Horvore 1977) described a new species of rain beetle from near the city of Santa Cruz as *Pleocoma conjugens*. Subsequently, Horvore's (1977) analysis of rain beetles identified two allopatric subspecies, one restricted to the Santa Cruz Mountains *(Pleocoma conjugens conjugens)* and the second restricted to the Santa Lucia Mountains (Pleocoma conjugens lucia) in Monterey County. These subspecies differ in morphological characteristics and food preferences of larvae. The Santa Cruz rain beetle is the only species of rain beetle known to occur in the Santa Cruz Mountains. The closest known population of any other species of rain beetles is located in the western Santa Clara Valley and is within a complex of populations assigned to *Pleocoma behrensi* (Frank Horvore, Placerita Canyon Nature Center, *in litt.*, 1993).

Adult male Santa Cruz rain beetles are generally stout-bodied, convex from above, relatively large when compared to other rain beetles (about 25 mm (1 in) in length), unicolorous, shining reddish-brown to blackish in color, and the ventral surface of the body is clothed with long hair (Horvore 1979). The head is specifically modified for digging. The elytra are not truncate at the apex and cover the entire abdomen. Front tibiae are dilated, flattened, and coarsely scalloped or toothed along the outer edge (Borror *et al.* 1976, Horvore 1977). Segment 3 of the antenna is elongate and strongly angulated anteriorly at apical 1/3. In the female, segment 6 of the antenna has lamellae distinctly shorter than segment 7; segment 9 is longest (Horvore 1977). Females are small (27 to 32 mm (1 to 1.3 in) in length) when compared to other species of rain beetles, with the pronotal surface (dorsal body plate of the thorax) shining and moderately densely punctate. Antennal segment 3 is short and subcylindrical; segment 9 is longest. They lack functional wings and are usually fatter than males (Horvore 1979). Adults lack working mouthparts and cannot feed (Horvore 1979).

Both male and female Santa Cruz rain beetles in the Mount Hermon area have been found in dry sandy soils in open areas (F. Horvore, pers. comm., 1993). Hazeltine (1950) located larvae in an area of grass and ponderosa pine, which is a description of ponderosa pine sand parkland. Larvae and adults are subterranean except when adult males emerge to fly in search of females. Eggs are laid in the female's burrow in spring or summer following mating in the fall or winter. Burrows may be up to 1 m (3 ft) deep. Egg development takes about 2 months. The larvae live in the soil and feed on the roots of plants (Borror *et al.* 1976). Probable host plants are *Pinus ponderosa*, *Gnaphalium* sp., and *Quercus agrifolia* (Hazeltine 1950). Larval lifespan extends for several years, 13 years for some *Pleocoma* species. Following transformation through the pupal stage to the adult stage and the onset of winter rains, the adult rain beetles emerge from underground burrows at dawn or dusk to mate (Borror *et al.* 1976, Horvore 1979). Females excavate a tunnel to the surface, release a pheromone, return to the tunnel, and await the arrival of a male (Dr. James Chemsak, University of California, Berkeley, pers. comm., 1993). That is the only time a female is above ground. Males locate females by flying and tracking pheromones emitted by the females (James Robertson, Los Angeles

County Museum of Natural History, pers. comm., 1993). Populations are often restricted to a few acres of habitat (Horvore 1979). The size and distribution of a population is limited to the area that flightless females can tunnel through to lay eggs and that larvae can excavate while feeding on roots.

Locality records indicate the Santa Clara rain beetle is limited to the Santa Cruz Mountains in the area of the communities of Ben Lomond, Felton, Mount Hermon, Scotts Valley, Redwood Glen, and Waddell Creek (Hazeltine 1950, Horvore 1977, F. Horvore *in litt.* 1993). All locations, except Waddell Creek, are within ponderosa pine sand parkland. The male rain beetle's ability for strong and sustained flight and its attraction to reflections of light from water may explain the locality record from Waddell Creek.

Historic and recent collection records indicate that the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Clara rain beetle are restricted to ponderosa pine sand parkland habitat. More than 50 percent of this habitat has been lost or altered from human development (e.g., housing development, agriculture, mining, recreation) and alteration of fire frequency. By 1986, approximately 100 ha (250 ac) of ponderosa pine sand parklands scattered over about 20 sites remained undeveloped (Marangio and Morgan 1986). By 1992, less than 40 ha (100 ac) was estimated to remain (R. Morgan, pers. comm., 1992).

Approximately 40 percent of the remaining known and potential ponderosa pine sand parkland habitat for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle is privately owned. Public land within existing and potential habitat includes Quail Hollow Ranch, owned by the County of Santa Cruz; a preserve adjacent to Quail Hollow Ranch and Bonny Doon Ecological Preserve, owned by the California Department of Fish and Game (Department); and Henry Cowell Redwoods State Park.

Previous Federal Action

The Service included the Mount Hermon June beetle as a category 2 candidate species in the January 6, 1989 (54 FR 554), and November 21, 1991 (56 FR 58804), Animal Notices of Review. Category 2 species are those for which information in the Service's possession indicates that listing is possibly appropriate, but for which substantive data on biological vulnerability and threats are not currently available to support proposed rules. On February 11, 1991, the Service was petitioned by Mr. Stephen McCabe, California Native Plant Society, to emergency list the Mount Hermon June beetle as an endangered species.

The Service made a 90-day finding on June 10, 1991, that substantial information had been presented indicating that the petitioned action may be warranted, and announced this decision in the August 19, 1992, **Federal Register** (57 FR 37513). The Service initiated a status review of the Mount Hermon June beetle at that time.

The Service was petitioned on July 16, 1992, by Dr. David Weissman, California Academy of Sciences, to list the Zayante band-winged grasshopper as an endangered species. This proposed rule constitutes the final finding for the petitioned actions for the Mount Hermon June beetle and Zayante band-winged grasshopper, in accordance with section 4(b)(3)(B)(ii) of the Act.

The Service learned of the status of and threats to the Santa Cruz rain beetle during its status reviews of the Mount Hermon June beetle and Zayante band-winged grasshopper. During the status reviews of the three taxa, the Service examined the available data on life history, ecology, locality records, and species' range. Sources of status and threat information for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle include reports and plans supplied by proponents and reviewing agencies for development projects within the range of these three species, and published and unpublished data from scientists with expertise on these taxa and their habitat needs. Following completion of the status reviews, the Service determined that enough information exists to propose the species for listing.

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Mount Hermon June beetle (*Polyphylla barbata*), Zayante band-winged grasshopper (*Trimerotropis infantilis*), and Santa Cruz rain beetle (*Pleocoma conjugens conjugens*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle inhabit restricted pockets of ponderosa pine sand parklands in the Santa Cruz Mountains. The imminent threat facing these species and their associated habitat is the ongoing and threatened destruction and adverse modification of habitat by one or more of the following activities: urban development, agriculture, sand mining, recreational use, and alteration of fire frequency (see Factor E below).

Historically there were approximately 200 ha (500 ac) of ponderosa pine sand parklands. By 1986, only about 100 ha (250 ac) of ponderosa pine sand parklands scattered over about 20 sites remained (Marangio and Morgan 1986). By 1992, estimates of remaining ponderosa pine sand parklands totalled less than 40 ha (100 ac) (R. Morgan, pers. comm., 1992).

Urban development has resulted in alteration and loss of habitat for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle. Construction of private homes, roads, and businesses has removed vegetation and modified soils through compaction and disruption of the soil's horizon. More than 480 ha (1,200 ac) of sandhills vegetation has been lost to residential development. One site where the Zayante band-winged grasshopper previously had been collected has since been converted to a parking lot (D. Weissman, pers. comm., 1992). Existing Santa Cruz County and Scotts Valley plans, zoning designations, and approved permits indicate that development will continue in this area and further fragment and reduce the habitat for these taxa (Marangio 1985).

Historically, portions of sandhills vegetation were cleared for agriculture, but they were unproductive, prone to erosion, and of little agricultural value (Griffin 1964, Storie *et al.* 1944 as cited in Griffin 1964). Although ponderosa pine sand parklands are not heavily used for agricultural purposes, past clearing for cattle grazing has contributed to their fragmentation and decline.

Sand deposits have been actively mined for construction purposes within the ponderosa pine sand parklands for at least five decades (Storie *et al.* 1944 *in* Griffin 1964). Much of the remaining habitat of the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle is threatened by sand mining. The type locality for the Zayante band-winged grasshopper has been mined and is currently an unvegetated deep pit (R.

Morgan, *in litt.*, 1992). Four large quarries with mining permits exist in the vicinity of known occurrences of the three insect species. Three of these mines are currently active: Quail Hollow Quarry, with current plans for expansion (John Gilchrist and Associates 1990); Olympia Quarry, also with plans for expansion; and Kaiser-Felton Quarry (Suzanne Smith, County of Santa Cruz Planning Department, pers. comm., 1993). Geyer Quarry, although currently inactive, was mined as recently as 1991 and could begin production again with adequate financing (S. Smith, pers. comm., 1993). Long-term plans of quarry operators are to mine the entire properties (S. Smith, pers. comm., 1993). Santa Cruz County is requesting and has received mining revegetation plans from some quarries. However, revegetation efforts likely will not provide for all of the essential requirements of the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle for successful feeding, cover, reproduction, and growth.

Recreational off-road motorcycle use has become popular in the Santa Cruz Mountains. Large group events (200+ people) occur on ponderosa pine sand parklands (Al Haynes, Watershed Analyst, San Lorenzo Water District, pers. comm., 1993). This recreational activity crushes and removes vegetation, causes compaction of soils, promotes soil erosion and runoff, and occasionally results in oil and gasoline spills.

Recreational use on public lands also threatens habitat occupied by these species. Henry Cowell Redwoods State Park includes about 8 ha (20 ac) of ponderosa pine sand parklands. An existing campground encompasses about half of this ponderosa pine habitat (Deborah Hilliard, California Department of Fish and Game, pers. comm., 1993, Sue Steinmetz, Henry Cowell Redwoods State Park, pers. comm., 1993). Quail Hollow Ranch, recently purchased by the county of Santa Cruz for development as a multipurpose regional park, contains approximately 17 ha (42 ac) of ponderosa pine sand parklands suitable for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle (County of Santa Cruz 1990). The master plan for the park includes establishment of sports fields for soccer and softball, equestrian use with stables, picnic facilities, and an amphitheater. Without careful planning and consideration, facility construction and use will result in adverse impacts to these species.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Amateur collecting for the Mount Hermon June beetle and Santa Cruz rain beetle has and does occur on a limited basis. Collection is restricted to the time period the species spend above ground as an adult (A. Hardy, pers. comm., 1993; Marilyn Perry, Santa Cruz County Agricultural Commissioners' Office, pers. comm., 1993). As these species become more uncommon, the interest of collectors is likely to increase; however, overutilization by collection is not known to occur at this time.

C. *Disease or predation.* Not known to be applicable.

D. *The inadequacy of existing regulatory mechanisms.* Regulatory mechanisms currently in effect do not provide adequate protection of the Mount Hermon June beetle, Zayante band-winged grasshopper, Santa Cruz rain beetle, or their habitat. There is no legal requirement for Federal agencies to consider and manage for these species during project design and implementation, although some Federal agencies have policies that encourage consideration of candidate species in the design and implementation of Federal projects.

At the State and local levels, regulatory mechanisms are also limited. These three taxa are not listed by the State of California under the California Endangered Species Act. State and local agencies may consider these taxa when evaluating certain activities for compliance with the California Environmental Quality Act and local zoning regulations. If an activity is identified as having a potential impact on these species, mitigation measures may be required by State and local regulating agencies to offset these impacts. Santa Cruz County requires that proposed projects comply with both general zoning requirements and environmental designations. However, the County has designated ponderosa pine sand parklands for quarry activity and zoned the area for special use that includes mining (S. Smith, pers. comm., 1993).

Public land ownership of existing and potential ponderosa pine sand parkland habitat for these three species is limited to two ecological preserves and two parks in the area. Only the Bonnie Doon Ecological Preserve and the small preserve within Quail Hollow Ranch provide protection for ponderosa pine sand parkland habitats. The two parks do not operate under mandates to manage for the Mount Hermon June beetle, Zayante band-winged grasshopper, Santa Cruz rain beetle, or ponderosa pine sand parklands.

E. *Other natural or manmade factors affecting its continued existence.* Pesticide use could pose a threat to these three taxa. If Mediterranean fruit flies or similar pest species are found within the Santa Cruz Mountains, aerial spraying of malathion or similar insecticide may occur within the range of the Mount Hermon June beetle, Zayante band-winged grasshopper, or Santa Cruz rain beetle. Local landowners may use pesticides to control targeted species of invertebrates around their homes and businesses. These pesticides may drift and kill non-targeted species such as the Mount Hermon June beetle, Zayante band-winged grasshopper, or Santa Cruz rain beetle. Pesticide application is expected at existing and planned golf courses and may occur on a limited basis at vineyards in the Santa Cruz Mountains.

Habitat loss has fragmented the already limited range of the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle into a patchwork of small, isolated remnants. Because of reduced population size and limited habitat availability, most of the remaining populations are vulnerable to extirpation from unpredictable environmental, genetic, and demographic events (Gilpin 1987). Extinction rates increase as habitat size decreases and distance from neighboring populations increases. These factors apply to the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle. As the remaining habitat units decrease in size, edge effect becomes increasingly important (i.e., smaller habitats have less space available to buffer adverse impacts from outside influences such as human disturbance or chemical contamination). In addition, populations in smaller habitat fragments are subject to the effects of genetic drift (the random loss of genetic variability). This phenomenon also reduces the ability of individuals and populations to successfully respond to environmental stresses, such as increased predation, diseases, or changes in climate.

Because the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle are adapted and restricted to ponderosa pine sand parkland, changes in primary vegetation are likely to result in decreased population viability and eventually local extirpation of these species. Ponderosa pine sand parkland is exhibiting a gradual change to mixed evergreen forest in some locations. Coast

live oak, madrone, and other species typical of mixed evergreen forest are encroaching into ponderosa pine sand parkland (Marangio and Morgan 1986). This encroachment has been attributed to the reduced frequency of fire (Morgan 1983). Historically, fire may have prevented the invasion of these mixed evergreen forest species that are not as well adapted to survive fire. Recent settlement of the area and associated suppression of fires to prevent property damage has aided in the establishment of mixed evergreen forest species in ponderosa pine sand parklands. The need for fire in maintaining ponderosa pine sand parkland is also supported by the occurrence of knobcone pine and, in some locations, Santa Cruz cypress (Holland 1986), both of which are fire tolerant.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in determining to propose this rule. Because the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle are threatened by one or more of the following factors—urban development, agriculture, recreational use, sand mining, fire frequency, pesticide use, and genetic restriction—the preferred action is to list the Mount Hermon June beetle (*Polyphylla barbata*), Zayante band-winged grasshopper (*Trimerotropis infantilis*), and Santa Cruz rain beetle (*Pleocoma conjugens conjugens*) as endangered. Critical habitat is not being proposed for these species for reasons discussed below.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Service designate critical habitat at the time the species is determined to be endangered or threatened. The Service finds that the designation of critical habitat is not prudent for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle at this time. The Service's regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) the species is imperiled by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species; or (2) such designation of critical habitat would not be beneficial to the species.

In the case of the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle, the second criterion is met. All populations of the three species are found on State or private lands where Federal involvement in land-use activities does not generally occur. Additional protection resulting from critical habitat designation is achieved through the section 7 consultation process. Since section 7 would not apply to land-use activities occurring within critical habitat, its designation would not appreciably benefit the species.

Available Conservation Measures

Conservation measures provided to the species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. No Federal involvement is expected for activities occurring within habitats currently occupied by the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle.

Under section 4 of the Act, listing the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle would provide for the development of a recovery plan, which would bring together Federal, State, local government, and private agencies and individuals to develop conservation strategies for these species. The recovery plan would develop a framework of recovery activities, priorities, and funding requirements to accomplish conservation objectives and ensure the survival and recovery of the Mount Hermon June beetle, Zayante band-winged grasshopper, and Santa Cruz rain beetle.

The Act and implementing regulations found at 50 CFR 17.21 for endangered species set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct), import or export, transport in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

Requests for copies of the regulations on listed wildlife and inquiries regarding them should be addressed to the U.S. Fish and Wildlife Service, Endangered Species Permits, 911 N.E. 11th Avenue, Portland, Oregon 97232–4181 (telephone 503/231–6241, facsimile 503/231- 6243).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to these species;

(2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of these species; and

(4) Current or planned activities in the subject area and their possible impacts on these species.

The final decision on this proposal will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to Field Supervisor, Ventura Field Office (see ADDRESSES section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 [48 FR 49244].

References Cited

A complete list of references cited in this rule is available upon request from the Ventura Field Office [see ADDRESSES section].

Author

The primary author of this proposed rule is Judy Hohman, Ventura Field Office (see ADDRESSES section) (telephone 805/644–1766).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulations Promulgation

Accordingly, the Service hereby proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. Section 17.11(h) is amended for animals by adding the following, in alphabetical order under INSECTS, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	*
Insects							
*	*	*	*	*	*	*	*
Beetle, Mount Hermon June.	*Polyphylla barbata*	U.S.A. (CA)	NA	E		NA	NA
*	*	*	*	*	*	*	*
Beetle, Santa Cruz rain	*Pleocoma conjugens conjugens.*	U.S.A. (CA)	NA	E		NA	NA
*	*	*	*	*	*	*	*
Grasshopper, Zayante band-winged.	*Trimerotropis infantilis*	U.S.A. (CA)	NA	E		NA	NA
*	*	*	*	*	*	*	*

Dated: April 25, 1994.

Mollie H. Beattie,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 94–11258 Filed 5–9–94; 8:45 am]

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50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Finding on Petition and Initiation of Status Review of 27 Foreign Butterflies

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of petition finding and status review.

SUMMARY: The U.S. Fish and Wildlife Service announces the 90-day finding that a petition to add seven kinds of foreign butterflies to the List of Endangered and Threatened Wildlife has presented substantial information indicating that the action may be warranted. A status review of these butterflies, together with 20 others that may be of similar concern, is initiated.

DATES: The finding announced herein was made on May 2, 1994. Comments and information may be submitted until September 7, 1994.

ADDRESSES: Comments, information, and questions should be submitted to the Chief, Office of Scientific Authority; Mail Stop: room 725, Arlington Square; U.S. Fish and Wildlife Service; Washington, DC 20240 (Fax number 703–358–2276). Express and messenger-delivered mail should be addressed to the Office of Scientific Authority; room 750, 4401 North Fairfax Drive; Arlington, Virginia 22203. The petition finding, supporting data, and comments will be available for public inspection, by appointment, from 8 a.m. to 4 p.m.,